



501.37916CX1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): S. NISHIYAMA, et al
Serial No.: 09/987,465
Filed: November 14, 2001
For: LIQUID CRYSTAL DISPLAY
Group: 2875
Examiner: T. Sember

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REQUEST FOR RECONSIDERATION

Mail Stop Non-Fee Response
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

September 10, 2003

Sir:

The following remarks are respectfully submitted in connection with the above-identified application in response to the Office Action dated June 10, 2003.

The indication that claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening, and that claims 4-20 are allowed, is acknowledged. Applicants note that claim 3 has been retained in dependent form at this time, since applicants submit that the parent claim patentably distinguishes over the cited art as will be discussed below.

Additionally, while the Examiner indicates that claims 19 and 20 are allowed, applicants note that claims 19 and 20 are dependent claims, in which claim 19 depends from claim 1 and claim 20 depends from claim 19, such that it is assumed that these claims should be indicated as objected to claims rather than allowed claims. Again, applicants note that such claims have been retained in dependent form, since applicants submit that claim 1 patentably distinguishes over the cited art as will be discussed below.

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The rejection of claims 1-2 and 20-23 under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al in view of Piejak et al is traversed insofar as it is understood, and reconsideration and withdrawal of the rejection are respectfully requested.

At the outset, the Examiner indicates that claim 20 stands rejected and at the same time has indicated that claim 20 is an allowed claim. Applicants assume that this rejection is in error and that the Examiner intended to reject only claims 1-2 and 21-23 which is consistent with the position set forth in the last paragraph at page 3 of the Office Action.

With respect to the features of independent claims 1 and 21, applicants note that each of these claims recite a liquid crystal display comprising "a liquid crystal display panel for modulating light to form an image" and "a back light unit having a plurality of lamps without inside electrodes and which are discharged by outside electrodes disposed along an outer surface of said at least one of said plurality of lamp tubes, said back light unit being disposed behind said liquid crystal display panel". Applicants submit that such features are not disclosed or taught by Matsumoto et al or Piejak et al taken alone or in any combination thereof.

Turning to Matsumoto et al, reference is made to the abstract thereof describing a discharge lamp having a large light output and a stable discharge and that "an image display device is constituted by arranging a plurality of the discharge lamps". Applicants note that Matsumoto et al refers to Figs. 17, 18, 19 and 21 as showing perspective views of different embodiments of an image display device composed of a plurality of discharge lamps. As described in connection with Fig. 17, at col. 12, lines 20-26, an image display device is produced by arranging a plurality of fluorescent lamps 1 shown in Figs. 14a and 14b or Figs. 16a and 16b, wherein one electrode pair is used as one pixel, and a voltage is selectively applied to a plurality of electrode pairs arranged to display a symbol, a character, a figure or the like. Fig. 18 is described as providing an inexpensive color image display device,

whereas Fig. 19 as described in col. 13, shows an image display device 10 composed of a plurality of display units 11 each composed of a plurality of discharge lamps 1 shown in Figs. 14a and 14b or Figs. 16a and 16b. While the Examiner contends that "Matsumoto et al teaches at column 13, lines 25-45 that the structure has a similar structure to the matrix wiring used in a LCD. Thus, Matsumoto et al implies that the device can be used for LCDs." (emphasis added), this position by the Examiner is erroneous. Referring to col. 13, lines 25-45 of Matsumoto et al, as described therein, the electrodes of the display unit shown in Fig. 19 has a structure similar to the structure of the matrix wiring used for a liquid crystal image display device, whereby as described, "In this matrix type display unit 11, the switching elements (not shown) connected to the feeding pins X2 and Y3 are turned on to apply the voltage to the electrode pair corresponding to the pixel 11-32". Thus, as apparent from the disclosure of Matsumoto et al, electrodes of the discharge lamps arranged in a matrix type form are applied with a voltage to illuminate portions of the lamps in the form of pixels to display a symbol, a character, a figure or the like. Thus, applicants submit that Matsumoto et al discloses a self-light emitting display device, wherein the lamps or portions thereof are selectively energized so as to display a symbol, a character, a figure or the like, as described at col. 12, lines 20-26 of Matsumoto et al. Accordingly, irrespective of the position set forth by the Examiner, applicants submit that Matsumoto et al does not disclose or teach a liquid crystal display panel for modulating light to form an image, nor a back light unit disposed behind the liquid crystal display panel and having the recited structure of independent claims 1 and 21, so that claims 1 and 21 and the dependent claims patentably distinguish over Matsumoto et al in the sense of 35 U.S.C. 102 and 35 U.S.C. 103 with regard to these features alone.

Likewise, applicants submit that Piejak et al, while disclosing a fluorescent light source including multiple fluorescent lamp tubes does not disclose or teach a liquid crystal display comprising a liquid crystal display panel for modulating light to

form an image, and a back light unit in which the back light unit is disposed behind the liquid crystal display panel. Since neither Matsumoto et al or Piejak et al disclose or teach the recited features of independent claims 1 and 21, applicants submit that the Examiner's contention that "it would have been obvious to one skilled in the art at the time the invention was made to use the lamp structure of Matsumoto et al with an LCD because Matsumoto et al teaches that the matrix wiring is set up for LCDs. Furthermore, it would have been obvious to one skilled in the art at the time the invention was made to modify the back-lit assembly as Matsumoto et al to include a plurality of lamp tubes with interconnected outside electrodes in order to efficiently control the display of Matsumoto et al with one source" (emphasis added) represents a hindsight reconstruction attempt of the present invention in complete disregard of the teachings of Matsumoto et al and utilizing the principle of "obvious to try" which is not the standard of 35 U.S.C. 103. See In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988). As is apparent, Matsumoto et al does not disclose a back light unit disposed behind a liquid crystal panel which modulates light to form an image. Since Piejak et al also fails to disclose or teach such features, it is readily apparent that the proposed combination necessarily fails under 35 U.S.C. 103, and applicants submit that independent claims 1 and 21 patentably distinguish over such references taken alone or in any combination thereof in the sense of 35 U.S.C. 103 with respect to the aforementioned features.

Turning to claim 1, the Examiner at least recognizes that Matsumoto et al fails to disclose or teach the recited feature of claim 1 of "wherein one outside electrode disposed at said at least one of said plurality of lamp tubes is electrically connected with another outside electrode disposed at an adjacent another of said plurality of lamp tubes". Although the Examiner apparently contends that Piejak et al provides such a structure and it would be obvious to modify Matsumoto et al in this manner to efficiently control the display of Matsumoto et al with one source, applicants note that Fig. 1 of Matsumoto et al clearly discloses that a positive voltage is applied to the

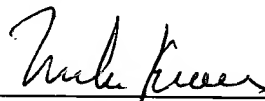
non-adjacent electrodes 32, 44 and 46, whereas a negative voltage is applied to the non-adjacent electrodes 36, 48 and 50. As such, it is apparent that the disclosure of Matsumoto et al is not to have adjacent outside electrodes electrically interconnected. More particularly, while Fig. 10 of Piejak et al discloses electrical interconnection of adjacent electrodes, Fig. 10 utilizes internal electrodes rather than outside electrodes which is contrary to the claimed features herein. As such, applicants submit that claim 1 and dependent claim 2 recite further features which patentably distinguish over Matsumoto et al and Piejak et al in the sense of 35 U.S.C. 103 and should be considered allowable thereover.

With respect to independent claim 21, this claim recites the feature of the outside electrode includes at least two kinds of electrodes having different voltages applied thereto, a plurality of groups of electrodes are constructed so that electrodes in each group are arranged in a substantially line configuration with respect to a direction transverse to an extending direction of a respective one of the lamp tubes and electrically interconnected with an electrode of an adjacent lamp tube and that each group of electrodes is arranged at a different position of a plurality of lamp tubes with respect to the extending direction of a respective one of the lamp tubes so that a same kind of the at least two kinds of electrodes is only arranged in the same line with respect to the transverse direction. Applicants submit that it is apparent that such features are not disclosed by Matsumoto et al, and are not provided by Figs. 1 and 10 of Piejak et al. That is, it is readily apparent that while Fig. 10 of Piejak et al discloses electrodes of adjacent lamp tubes being interconnected, Piejak et al discloses inside electrodes which is contrary to the claimed features of "without inside electrodes". As pointed out above, such features are also not disclosed by Matsumoto et al, such that applicants submit that independent claim 21 and the dependent claims recite further features which patentably distinguish over the proposed combination of Matsumoto et al and Piejak et al in the sense of 35 U.S.C. 103, and such claims should be considered allowable at this time.

For the foregoing reasons, applicants submit that neither Matsumoto et al nor Piejak et al disclose or teach a liquid crystal display comprising a liquid crystal display panel for modulating light to form an image and having a back light unit as defined being disposed behind the liquid crystal display panel nor the other features as recited in the independent and dependent claims of this application. Thus, applicants submit that in addition to the indicated allowability of claims 3-20, whether or not the claims are objected to, claims 1, 2 and 21-23 patentably distinguish over this cited art in the sense of 35 U.S.C. 103 and should be considered allowable thereover. Accordingly, issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (501.37916CX1) and please credit any excess fees to such deposit account.

Respectfully submitted,



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